



Super-Simple Audio Cellbot

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TOOLS:

- [Soldering/desoldering tools \(1\)](#)
- [screw drivers various \(1\)](#)



PARTS:

- [Android smartphone \(1\)](#)
- [AA Batteries \(3\)](#)
- [TRRSTAN 2.0 Kit \(1\)](#)
<http://robots.allthingsgeek.com/kits/trrstan-2-cellbot-kit.html>
- [1x Wii controller \(1\)](#)
- [Servo \(2\)](#)

SUMMARY

Celljoust!

What is a cellbot?

A cellbot is a small robot using a smartphone as the brain. They can be autonomous or remotely controlled over the Internet. There are many different types of cellbots, but they typically share the following features:

Small; around 6 in. square, less than 1 lb. Mobile; uses wheels and motors to get around Cheap, compared to other robotics platforms Based on open-source code Clever; has lots of processing power and sensors due to leveraging smart-phone technology DIY; there are kits and plans available, fun to build Simple; can be successfully built by the beginner roboticist

How is TRRSTAN special?

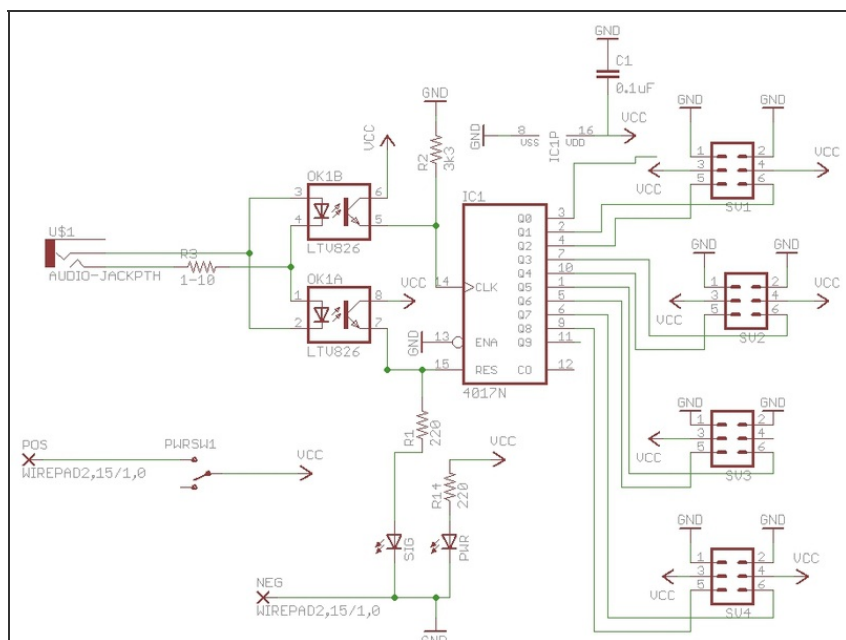
TRRSTAN's servos are controlled via the headphone jack so she does not need a microcontroller. This dramatically reduces cost and complexity.

Step 1 — Super-Simple Audio Cellbot



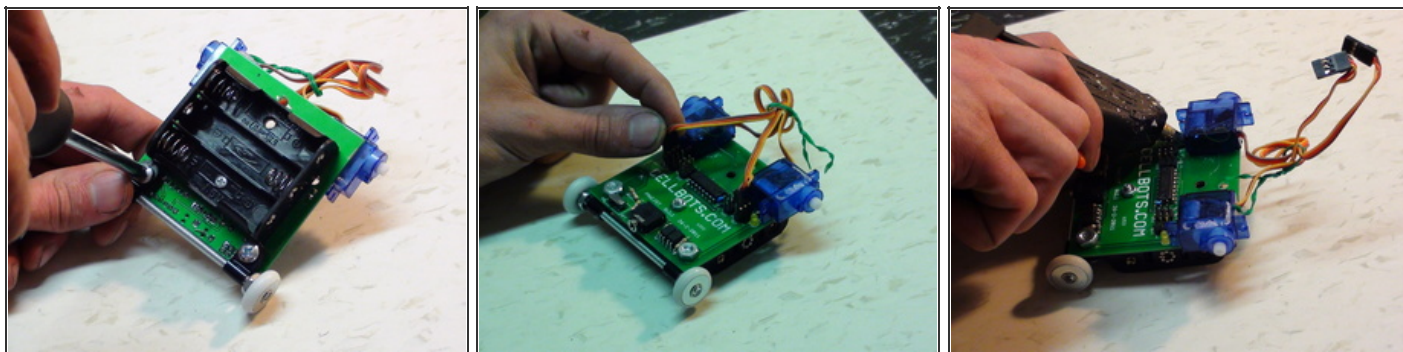
- There are two ways to get the parts that you will need for this project. The easy way is to buy [a kit from robots.allthingsgeek.com](http://robots.allthingsgeek.com). The harder way is to scrounge the parts yourself and use a protoboard. The basic circuit is a PPM-to-PWM decoder. This is a standard RC controller circuit. To build it you will need a 4017 decade counter. You will also need to find some continuous-rotation servos, or you can modify some standard servos.

Step 2



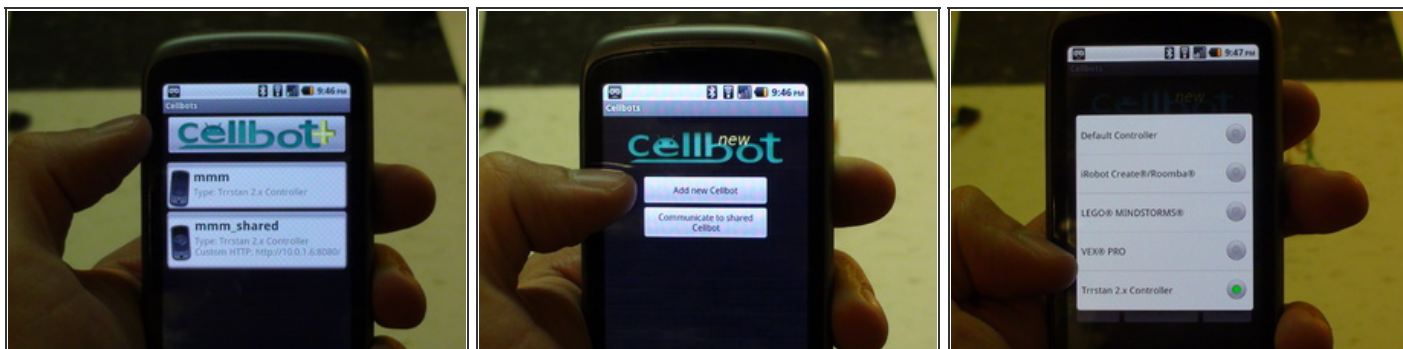
- Solder up the board. If you are using the kit this step is very simple. Just make sure you put the chips in the right way. If you are using a protoboard you will have to follow the schematic.

Step 3



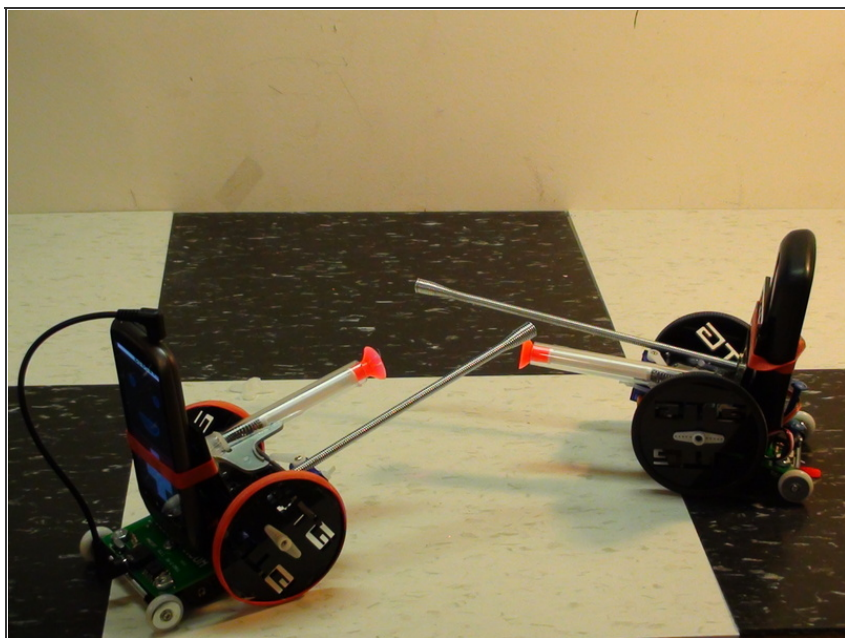
- Assemble the mechanicals. The basic design is two large drive wheels attached to the servos and two small wheels with an axle bolted to the circuit board. You may also attach optional weapons or other devices driven by the extra servo headers.

Step 4



- Install the software. The software can be downloaded from the Android market. Just open the market app and search for Cellbots. Once the app is installed you can configure the robot by clicking on the **Cellbot+** image, **Add new Cellbot**, and finally selecting **Tristan 2.X Controller** as the type.

Step 5



- There are a couple of different ways to control your robot. You can use voice commands, Google Chat, a web browser, or another Android device. Refer to the Cellbots website for more details. You can also do local control with a Wii controller which is our favorite for fighting. For this you must first install the WiimoteController from the market. We made a fighting game with parts from the dollar store. The object is to pull the gold-colored shield off the front of the other robot using a magnet wand. We also added dart guns from the dollar store for extra firepower.

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